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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/719,797	11/20/2003	Yoichiro Yamanaka	00663D/HG	3087

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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 03/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/719,797	YAMANAKA ET AL.	
	Examiner	Art Unit	
	John L. Goff	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) *1-4* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/665,323.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 12/8/05. The previous claim objections have been overcome.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

3. Applicant's election of Species III, claims 5-9, in the reply filed on 12/8/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Objections

4. Claim 8 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 8 should be amended to depend on claim 7 to provide proper antecedent basis for "the wax".

Claim Rejections - 35 USC § 103

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (U.S. 6,277,455) optionally in view of Kobiella (U.S. Patent 4,661,185).

Shimizu et al. disclose a method of bonding a polyester film (e.g. biaxially oriented) with a metal sheet to form the interior of a can wherein the method comprises providing a metal sheet, providing a polyester film, heating the metal sheet above the melting point of the polyester film, passing the polyester film and heated metal sheet through a pair of rolls to melt-bond the polyester film to the heated metal sheet to form a laminate, and immediately thereafter cooling the laminate (Column 1, lines 10-15 and Column 8, lines 14-19). Shimizu et al. do not specifically teach that during melt-bonding the metal sheet contacting side of the polyester sheet is heated above its melting point for between 1 and 20 msec. However, Shimizu et al. teach (a) the heated metal sheet melt-bonds with the polyester film and (b) following the cooling treatment the laminate may undergo a remelting process to affect the molecular maneuverability, e.g. orientation, of the polyester film, i.e. the molecular maneuverability of the polyester film may be controlled following melt-bonding (Column 2, lines 27-30 and Column 8, lines 14-22 and 31-32

and Column 15, lines 56-67). Thus, it appears intrinsic to the process taught by Shimizu et al. that during melt-bonding the surface of the polyester sheet contacting the metal sheet is heated above its melting point for a period between 1 to 20 msec as the materials and process steps taught by Shimizu et al. are the same as those claimed and disclosed by applicants specification and applicants specification specifically notes if the surface of the polyester sheet contacting the metal sheet is heated above its melting point for a period less than 1 msec the polyester film and metal sheet do not melt bond, thus (a) meets this requirement, and if the surface of the polyester sheet contacting the metal sheet is heated above its melting point for a period greater than 20 msec the polyester film does not retain molecular maneuverability, thus (b) meets this requirement. In any event, absent any unexpected result it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the melt-bonding time, i.e. the time the surface of the polyester film contacting the metal sheet is above the melt temperature, in Shimizu et al. as a function of the melting temperature of the polyester film, the depth of melting desired, the bonding pressure applied, etc. as doing so would have required nothing more than ordinary skill and routine experimentation, it being noted experimentally determining the melt-bonding time for polyester film in this manner was well known in the art as shown for example optionally by Kobiella wherein Kobiella suggest as exemplary a melt-bonding time of about 15 to about 25 milliseconds.

Kobiella is exemplary in the art of melt-bonding polyester film wherein the time required for melt-bonding is determined as a function of the melt-temperature, the depth of melting desired, the bonding pressure applied, etc. wherein an exemplary range of about 15 to about 25 msec is suggested (Column 10, lines 61-68 and Column 11, lines 1-10).

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. and optionally Kobiella as applied to claims 5 and 6 above, and further in view of Remmington et al. (U.S. Patent 3,567,486) and Chu et al. (U.S. Patent 4,956,241).

Shimizu et al. and optionally Kobiella as applied above teach all of the limitations in claims 7 and 8 except for a specific teaching of including carnauba wax in the polyester film in an amount of 0.2 to 2% by weight. Shimizu et al. teach the polyester film includes 1 to 5% by weight of a lubricant such as silica, calcium carbonate, titanium dioxide, etc. or the like (Column 3, lines 30-67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the lubricant taught by Shimizu et al. as optionally modified by Kobiella waxes as these were well known functionally equivalent lubricants to those taught by Shimizu et al. as shown for example by Remmington et al. wherein waxes such as carnauba waxes were known as improved lubricants for polyester films as shown for example by Chu et al. As to the specific % by weight, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular % by weight of the lubricant within the range suggested by Shimizu et al. as modified by Remmington et al., Chu et al., and optionally Kobiella as a function of the releasing/slipping properties of the polyester film as doing so would have required nothing more than ordinary skill and routine experimentation.

Remmington et al. discloses lubricants for polyester films include silica, calcium carbonate, titanium dioxide, waxes including ester waxes, etc. (Column 3, lines 14-20 and Column 4, lines 16-36). Chu et al. disclose a polyester film including a lubricant having improved slip (i.e. release) characteristics wherein the lubricants include ester waxes such as carnauba wax (Column 2, lines 12-15 and 59-67 and Column 3, lines 29-34).

8. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. and optionally Kobiella as applied to claims 5 and 6 above, and further in view of Kimura et al. (U.S. Patent 5,948,525).

Shimizu et al. and optionally Kobiella as applied above teach all of the limitations in claim 9 except for a specific teaching of the biaxially oriented polyester film having a relaxation time greater than 150 msec. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the oriented polyester film in Shimizu et al. as optionally modified by Kobiella a film having a relaxation time of 270 msec or longer as was known in the art as shown for example by Kimura et al. such that the oriented polyester film has improved workability properties.

Kimura et al. disclose a stretched, i.e. oriented, polyester film for bonding with a metal sheet to form a can wherein the polyester film is formed to have a relaxation time of the carbonyl portion of 270 msec or longer as measured by high resolution NMR (Column 1, lines 7-12 and Column 4, lines 1-10)

9. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. (U.S. 5,424,121) optionally in view of Kobiella.

Murakami et al. disclose a method of bonding a polyester film (e.g. biaxially oriented) with a metal sheet to form the interior of a can wherein the method comprises providing a metal sheet, providing a polyester film, heating the metal sheet above the melting point of the polyester film, melt-bonding the polyester film to the heated metal sheet to form a laminate, and immediately thereafter cooling the laminate (Column 1, lines 6-13 and Column 7, lines 38-51). Murakami et al. do not specifically teach that during melt-bonding the metal sheet contacting

side of the polyester sheet is heated above its melting point for between 1 and 20 msec. However, Murakami et al. teach (a) the heated metal sheet melt-bonds with the polyester film and (b) only the melt-bonded surface layer of the polyester film is rendered amorphous, i.e. unoriented, following the cooling treatment, i.e. the molecular maneuverability of the polyester film (as a whole) may be controlled following melt-bonding (Column 7, lines 38-51). Thus, it appears intrinsic to the process taught by Murakami et al. that during melt-bonding the surface of the polyester sheet contacting the metal sheet is heated above its melting point for a period between 1 to 20 msec as the materials and process steps taught by Murakami et al. are the same as those claimed and disclosed by applicants specification and applicants specification specifically notes if the surface of the polyester sheet contacting the metal sheet is heated above its melting point for a period less than 1 msec the polyester film and metal sheet do not melt bond, thus (a) meets this requirement, and if the surface of the polyester sheet contacting the metal sheet is heated above its melting point for a period greater than 20 msec the polyester film does not retain molecular maneuverability, thus (b) meets this requirement. In any event, absent any unexpected result it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the melt-bonding time, i.e. the time the surface of the polyester film contacting the metal sheet is above the melt temperature, in Murakami et al. as a function of the melting temperature of the polyester film, the depth of melting desired, the bonding pressure applied, etc. as doing so would have required nothing more than ordinary skill and routine experimentation, it being noted experimentally determining the melt-bonding time for polyester film in this manner was well known in the art as shown for

example optionally by Kobiella wherein Kobiella suggest as exemplary a melt-bonding time of about 15 to about 25 milliseconds.

Kobiella is described above in full detail.

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. and optionally Kobiella as applied to claims 5 and 6 above, and further in view of Remmington et al. and Chu et al.

Murakami et al. and optionally Kobiella as applied above teach all of the limitations in claims 7 and 8 except for a specific teaching of including carnauba wax in the polyester film in an amount of 0.2 to 2% by weight. Murakami et al. teach the polyester film includes as little as 0.05 % by weight and as much as 15 % by weight of a lubricant such as silica, calcium carbonate, titanium dioxide, etc. (Column 5, lines 59-68 and Column 6, lines 10-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the lubricant taught by Murakami et al. as optionally modified by Kobiella waxes as these were well known functionally equivalent lubricants to those taught by Murakami et al. as shown for example by Remmington et al. wherein waxes such as carnauba waxes were known as improved lubricants for polyester films as shown for example by Chu et al. As to the specific % by weight, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular % by weight of the lubricant within the range suggested by Murakami et al. as modified by Remmington et al., Chu et al., and optionally Kobiella as a function of the releasing/slipping properties of the polyester film as doing so would have required nothing more than ordinary skill and routine experimentation.

Remmington et al. and Chu et al. are described above in full detail.

11. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami et al. and optionally Kobiella as applied to claims 5 and 6 above, and further in view of Kimura et al.

Murakami et al. and optionally Kobiella as applied above teach all of the limitations in claim 9 except for a specific teaching of the biaxially oriented polyester film having a relaxation time greater than 150 msec. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the oriented polyester film in Murakami et al. as optionally modified by Kobiella a film having a relaxation time of 270 msec or longer as was known in the art as shown for example by Kimura et al. such that the oriented polyester film has improved workability properties.

Kimura et al. is described above in full detail.

Response to Arguments

12. Applicant's arguments with respect to claims 5-9 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argue, "Shimizu et al. disclose a method wherein a metal plate is heated to a temperature of not less than a melting point of a film and the film is laminated. In this procedure, the film is melted (e.g. see col. 8, lines 15-19) and the crystal structure and any orientation is lost. Thereafter, rapid cooling (quenching) is used so that the crystal structure of the film is maintained in an amorphous state.".

The altering of the crystal structure and the orientation of the polyester film in Shimizu et al. occurs in a remelting step following formation of the cooled laminate, and thus, this demonstrates the ability in Shimizu et al. to control the molecular maneuverability of the polyester film following melt-bonding.

Applicants further argue, "Kobiella et al. does not change this basic teaching in Shimizu. Also, Kobiella refers to a different process. Kobiella et al. disclose a method for heat-sealing a thermoplastic resin.".

Kobiella is applied optionally as a showing of the well known technique of melt-bonding polyester film wherein the time required for melt-bonding is determined as a function of the melt-temperature, the depth of melting desired, the bonding pressure applied, etc.

Applicants further argue, "As explained on pages 4-6 of the specification it is important to maintain the physical properties of the film by not allowing the orientation and crystal form to be changed or eliminated by melting (e.g. not to become amorphous, as occurs in Shimizu)."

The claims are not commensurate in scope with this argument, as the claims do not require the prevention of a change in the orientation and/or crystal form of the resin film. Furthermore, on pages 4-6 there is no disclosure of preventing the orientation or crystal form of the resin film to be changed or eliminated by melting, it being noted page 6 first full paragraph appears to suggest the crystal form of the resin film is changed by the method of the present invention. As to Shimizu et al., as noted above the remelting process not melt-bonding renders the polyester film amorphous.

Applicants further argue, "The rapid cooling prevents a crystalline form so that as far as Murakami et al. is concerned, amorphous state is present therein even if primarily near the fused surface. This is disparate from the crystal structure of a film defined by the present application.".

The claims are not commensurate in scope with this argument as the claims do not preclude the metal sheet contacting surface of the polyester film to be in an amorphous state after melt-bonding.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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